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PERCEPTIONS OF CIVIL AND MILITARY HEALTH AGENCIES IN KUALA LUMPUR, MALAYSIA ON HEALTH NEEDS ASSESSMENT DURING URBAN DISASTER RESPONSE

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Abstract:

Introduction: Health needs assessment (HNA) following a disaster is a systematic method to review the health issues facing the population affected by the disaster. It leads to an agreed priorities and appropriate resource allocation that will improve the victim's health. For HNA to be accurate, it must be deployed within days or even hours after the disaster as the health response team initially using their resources in the search and rescue (SAR) efforts, will start to shift their health response to all victims of the disaster. **Objectives:** The understanding of HNA among health agencies involved in managing urban disasters, their experience, challenges and suggestions for improvement. **Methods:** A qualitative research methodology with single case study design was utilized to explore HNA during disaster which included in-depth interview (IDI) with representatives from the Malaysian Ministry of Health (MOH) and the health services of the Malaysian Armed Forces (MAF)

in Kuala Lumpur, Malaysia. Data were analysed using ATLAS.ti v23 software. **Results:** The IDI with MOH and MAF health services representatives highlighted a very good understanding of HNA post urban disasters even though MOH had limited protocols in doing so. However, the MAF representative highlighted that one of the reasons HNA was not done is, due to the multiple structure of commands that complicates the management during disasters. Both the civilian and military health agencies had very good understanding and vast experience in post disaster health management even without performing a proper HNA. **Limitation:** This study did not involve any Non Goverment Organizations (NGOs) and community groups who are actively involved in health response during urban disasters. **Conclusion:** The challenges faced during past disasters has shown the importance of HNA in managing health of the affected population post disasters and should be recommended by the relevant authorities.

Keywords:

Disaster Management, Health Need Assessment (HNA), Health Response, Malaysian Armed Forces (MAF), Urban Disaster Response

Introduction

Disaster is defined as an event which causes interruptions to normal community activities, national services, loss of life, damage to infrastructures, economic lost, or environmental damage that is more than the ability of the local community to manage it and requires extensive support to manage the event. Managing disasters is a complex and costly practice no matter how prepared the community are. Urban disasters refer to disasters that occurs in cities or towns. Major cities like Kuala Lumpur with a population of Greater Kuala Lumpur of 8.6 million people in the year 2023, urban disasters may cause a very significant impact to the normal daily activities and create a lot of financial lost to those effected.

Kuala Lumpur has seen its share of a lot of disasters happening in its area. From the great floodings in 1923 to the landslides in Bukit Antarabangsa in 2008, Table 1 shows some of the most devastating disasters in Kuala Lumpur area in the past centuries.

Year	Type of Disaster	Affected	Human Cost
1971	Major Flooding	180k Residents	32 deaths
1993	Highland Towers Collapse	3 blocks of 12 storey apartments	48 deaths
2008	Bukit Antarabangsa Landslide	14 houses	4 died 14 injured

Table 1: History of Significant Disasters in Kuala Lumpur Region

Source: The Centre for Excellence in Disaster Management and Humanitarian Assistance, Malaysia Disaster Management Reference Handbook. CFE-DM. October 2022.

One of the most important effects of any disasters is the effect on the health of the population affected. The health effects can be as simple as just minor injuries with some psychological trauma affecting those involved or witnessed the disaster happening to severe effects on the healthcare system where multiple death and severe injuries occurs requiring extensive medical specialist services with long term rehabilitation and lifetime social and psychological impact on the victims or those witnessing the disaster happening.

Research Objectives

To ensure the best healthcare support is provided to those affected by the disaster especially in a highly populated urban disaster, a Health Needs Assessment (HNA) needs to be done appropriately. Health needs assessment is a systematic method to review the health issues facing the population affected by the disaster. It is a quick, simple and comprehensive method of performing an assessment of the healthcare needs of the population affected by the disaster in a structured manner. It leads to an agreed priorities and appropriate resource allocation that will improve the health of the affected population.

For urban disasters in Kuala Lumpur, the agencies involved in performing HNA must be from government agencies related to healthcare services. However, some government agencies have adapted a medical unit or health sector in their department. Others will quickly point fingers or redirect victims straight to the hospitals as they only look at health as a medical issue only. The objectives of this research are to look into the understanding of those involve in health responds following urban disasters towards HNA, their experience, challenges and suggestions for future improvement in their department and the whole system.

For the report of the HNA to be reliable and accurate, the team deployed to perform the HNA must be deployed within days or even hours after the disaster happened. This is because the health response team who arrived at the scene of the disaster are initially focusing their limited resources in the search and rescue (SAR) efforts, after they have done their SAR efforts then they will start to shift their health response to all victims that has survived the initial impact of the disaster. The assessment team should always whenever possible to get input from the local people in making assessment as to the situation in the disaster area as perception and interpretation by non-local residents can be misleading and in some cases be totally wrong.

Methodology

Research Approach

This study was done using a qualitative single case study where we were looking for the perceptions of agencies involved in health response in an urban disaster. We have selected Kuala Lumpur to be the urban area for our study protocol. A detail search of all relevant documents was done which showed the government agencies and non-government agencies involved in urban disaster responds.

As we were looking for the perception of the agencies involved in healthcare respond during urban disaster, we would first need to identify the agencies involved, get the documents from those agencies and other documents related to the research topic. Study and understand the research topic and then proceed for further data searching through in-depth interview and data analysis of all the data collected.

Data Sources

A detail and thorough search were done on several digital online database for documents related to our research. We used PubMed, Google Scholar and PsychINFO to find any relevant documents. We limit our search for documents from the year 2000 onwards with keywords including Disaster AND urban AND health AND Malaysia.

As the Malaysian Security Council or Majlis Keselamatan Negara (MKN) has issued a directive famously known as the MKN Directive 20 as the number one document reference for all agencies involved in managing disasters in Malaysia, we used this document as our main guide to search for all related documents and later Interview all relevant agencies for this research.

Literature Review

Literature review and document analysis is a very important tool in any qualitative studies. The literatures and documents found through our extensive search will be read thoroughly to understand the subject of the research. Information gathered through analysis of the documents will be organized into themes and subthemes as we require for the specific research topic. For this research, a total of 47 documents was found but a detail analysis of all the documents revealed only 11 documents were the most relevant to the subject of our research.

The most important document for Disaster Management in Malaysia would have to be the Malaysian National Security Council Directive 20: The Policy and Mechanism on National Disaster and Relief Management. This document was created after the Malaysian cabinet meeting due to the Collapse of the Highland Towers in December 1993. This document was created to guide all government agencies for ay disasters that occur in Malaysia till now.

The directive prescribes the mechanism on the management of disasters including the responsibilities and functions of related agencies under an integrated emergency management system. This is achieved through the establishment of the Disaster Management and Relief Committee at three different levels (federal, state and district levels) pending the severity of the disaster. At the Federal level, this committee is chaired by the Minister appointed by the Prime Minister. The directive is supported by other Standard Operating Procedures which outline the mechanism as well as roles and responsibility of various agencies for specific disasters,

In Depth Interviews

An in-depth interview (IDI) session was done on 5 agencies which were initially thought to be involved in health responds during urban disasters in Kuala Lumpur. These agencies were the Health Department office of the Federal Territory of Kuala Lumpur, The Hospital Kuala Lumpur Emergency Department, The Health Unit of the Kuala Lumpur City Council or Dewan Bandaraya Kuala Lumpur (DBKL), The fire and rescue department of Kuala Lumpur and National Disaster Management Agency (NADMA). However, the interviews showed clearly that 3 out of the 5 agencies are not involved directly with healthcare responds during disasters which only left to 2 agencies only which is the Emergency Department of the Kuala Lumpur Hospital (HKL) and the Health Division of the Royal Malaysian Armed Forces (MAF).

We spoke directly with the current Head Department of the Emergency Department of HKL for the in-depth interview as he was the most experience person involved with urban disasters

healthcare management in HKL. For the in-depth interview with the Health Division of the MAF, we spoke to the Head Administrator, Health Services Division, Malaysian Armed Forces at the time. The interviews were done in their office at a suitable time for them where they spent about 2 hours answering our questions regarding this research.

The in-depth interview was done in a mixture of Bahasa Malaysia and English and was recorded by us using a digital audio recorder which was tested several times before the meeting started. The interviews were also dictated into text and translated into English for full data analysis.

Data Analysis
The information provided by the various documents found through online searches was very beneficial. We were able to narrow down our search for documents related to the research topic very quickly especially after reading through NSC Directive 20 document. All the documents were studied in detail to search for health needs assessments details for the agencies to perform during and/or after a disaster.

The in-depth interview recordings were huge files (more than 100 Megabytes). We had to transfer the file onto a computer for analysis. We played the audio recording and transcribed the recorded audio into text which took several weeks as the recording was sometime slightly unclear or had some disturbance from other noises such as surrounding noises such as sound from the fan, air conditioner, other individuals talking or walking loudly in the corridor, etc.

The transcribed text then was translated manually as the Bahasa Malaysia used by the expert panels were not standard language for any software to be able to understand and translate appropriately. The full English text was later read in detail for theme and subtheme classification of the full text for specific information regarding our research was found. The detail themes and subthemes were also raised using the software, Atlas.ti version 23.

Ethical Consideration
All data collection was done in an ethical manner with no specific names used for data collection and references. The names of our expert panels are also not written in this report to protect his/her privacy. This research was done as part of a bigger TRGS project which was ethically approved by the Ethics committee for research in the National Défense University of Malaysia (NDUM) on the 20th March 2023.

Results
Perception of HNA among the agencies involved in managing healthcare issues post urban disaster would include how they understand HNA, their experiences in previous urban disasters, the challenges they face in the past and suggestions they would have to make HNA an easier task for them and for other agencies not just for urban disasters but for all disasters throughout the nation.

Data collection from documents analysed showed very limited guide for all agencies to perform a HNA including the Ministry of Health (MOH). One document issued by the MOH even mentioned that the health need assessment of the population affected by the disaster can be done by asking local senior citizens, local leaders, religious leaders, reading it from newspaper and other media outlets. It does not go into details what are the information required to report

in the HNA to those managing healthcare issues post disasters.

Understanding of the term and the importance of HNA was demonstrated well by both agencies in their respective interviews. The panel from the civilian agency spoke about the importance of accessibility of the victims to go to any healthcare facilities in Kuala Lumpur (KL). The panellist also mentions about the logistical issues including the transportation and about the various modalities of healthcare services in the city of KL. The expert panel also mentioned that healthcare services is not just offered by MOH in KL but also by other agencies, Non-Governmental Organizations (NGOs) and even individuals among the communities involved in the respond phase of the disaster.

The expert panel from the MAF added that the HNA is different between urban disasters and rural disasters as the management of the resources between these two types of disasters is very complex. According to the panellist, this is probably due to the structure of the organization in the civilian community which is complicated due to the multiple local council's involvement and multiple agencies involved in the managing of healthcare related issues post disasters. This makes the process of having an HNA a difficult challenge for implementation due to multiple structure of commands in the civilian side. To the panellist, the military single command structure makes HNA an easier tool to be used as the decision-making authority clear.

From the experience perspective, both agencies had unique and interesting experience in managing healthcare during urban disasters. For the civilian agency, even though the whole community including government agencies and NGOs respond to the disaster, NGOs are usually are the ones that provide a quicker respond as they have easier Standard Operating Procedures (SOP) to follow and less bureaucracy to overcome. However, NGOs will have limited resources, constraints on assets, capabilities and system. The government agencies through the NSC have a clear mechanism for managing the disaster involving local councils, district and state officers, full time member of parliament (MP) and even full-time ministers but in some cases, they have seen that due to lack of coordination, victims of flooding could not be help for up to 3 days due to ambulance and firemen have no access to the victims and in some cases not boats to send food to the victims trapped in urban flooding.

The military side on the other hand reported about their experience in managing medical emergencies without the partnership of private hospitals. This scenario which occurred during the COVID19 pandemic disaster in KL showed how the government did not use the partnership of private healthcare facilities to support the government healthcare facilities during disasters. However, the military had field assets which was deployed to be used in the civilian disaster areas during that time.

Subthemes	Civilian Medical Agency	Military Medical Division
Understanding of HNA	➢ Accessibility to Centres / Services ➢ Transport for Different Modalities ➢ Agencies, Community and NGOs	➢ Resources management different complexity in urban & rural ➢ Multiple agencies in civilian control makes difficult to manage
Experience in Health Response Post Disaster	➢ NGOs respond faster but less asset and less capable ➢ Agencies slow but potentially great	➢ Public & private partnership should establish ➢ Private Emergency dept not utilized ➢ Military field medical always ready
Challenges of Health Response Post Disaster	➢ Lack interagency coordination ➢ Role of NADMA & NSC unclear	➢ Piping issue in city ➢ COVID19 lockdown no purpose ➢ Need national health insurance ➢ Alternative food & water supply to cities
Suggestions for Improvement	➢ Community responders ➢ Resource mapping ➢ Better information management	➢ All private hospitals should be used for all patients

Table 2: The Main Findings from IDI With Both Civilian and Military Agencies

From the perspective of challenges, the civilian agencies felt apart from limited access to disaster areas and victims, the interagency coordination was very low especially when it comes to expertise and equipment usage during disasters. The role of the National Disaster Management Agency (NADMA) and NSC was unclear of whom to take charge. The military expert mention about the serious problem with the piping system in KL. The lock down during COVID19 had no purpose and the density of the population in urban areas is a challenge. Ther panellist also added that the funding for disasters by public funds is very limited and may require some kind of national insurance-based scheme to address this issue. Also mentioned about the source for food and water in urban areas like KL is very limited with no alternative for water supply for KL in particular.

The government agency officer gave some suggestions to the current situation by having more community led responders for urban disasters, provide a resource mapping of the urban area with fairer distribution of resources, create a better information retrieval system and establish a proper operations room during disasters. The military panellist felt that the single most important thing to suggest was to involve all private healthcare facilities to accept patients during urban disasters.

With all their understanding and experience with great suggestions, they all admit that they had never perform a proper HNA post disaster in the past. However, both agencies agreed that a single authority in managing disasters is better especially in making HNA a priority hence will be implemented well in all future disaster management.

Discussion

In the world of disaster management, healthcare respond would be one of the most critical service required by the victims affected by the disaster. If the disaster occurs in a highly populated urban area, this urban disaster will usually cause a lot of death and injuries which will require a lot of medical work for all victims, dead or alive. This study shows the interesting fact about how agencies in dealing with healthcare issues post urban disasters have not done a proper HNA even with many years of experience. It is not about knowing; it's about not having it in the system and therefore not being practice routinely.

Strength

This research was done as part of a bigger research which means that more data was available then the ones reported here. For example, IDI was done on 9 agencies in total but after looking at them all carefully, only two IDI was included in this report as the others were not related. We were also able to see how limited they were documents regarding HNA even though HNA is now a standard practice globally post disasters.

Limitations

We felt that this research could have been improve if we included information from NGOs either from local Malaysian NGOs like Mercy, IMARET and MRA as many of these NGOs have international experience in managing disasters with volunteers going all over the world to help in disasters happening around the world. The reason we did not take any information including documents and interview from NGOs is due to the fact that our big project is only regarding government agencies and civil-military involvement in managing urban disasters. This study also only dealt with urban disaster respond where it is a bit limited in Malaysia as our rural areas are more prone to disasters than urban areas.

Conclusion

Malaysia has a significant risk of urban disaster especially in its capital Kuala Lumpur. The NSC Directive 20 is a great document to be used as a reference for all government agencies and NGOs which has been used since 1994. However, very limited documents mention anything about HNA with even the main agency in healthcare management, the MOH admits that they have not perform a proper HNA is the past. However, these experience and challenges faced by them has shown the importance of performing a HNA in future disasters to facilitate healthcare management of affected population by urban disasters. However, the HNA guidance should be recommended by the relevant authorities.

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